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Morphosyntactic variation in Bantu: Focus on East Africa

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Recent studies have developed a systematic approach to morphosyntactic variation among Bantu languages, taking well-known and widely attested construction types as a starting point and sketching their distribution across the family. One such approach, Guérois et al. (2017), utilises 142 morphosyntactic parameters or features, across a sample of some 50 Bantu languages (Marten et al. 2018). The present paper builds on this work and focusses on 10 parameters of variation where there is a significant difference between the values for East African Bantu languages and non-East African Bantu languages of the sample. The parameters relate to areas such as noun class morphology, agreement, and word order and so cover a wide range of morphosyntactic structures. The paper shows that the differences overall can be used for an initial characterisation of East Africa as a morphosyntactic area, with its own specific language change and language contact dynamics.

Keywords: Morphosyntactic variation, word-order, East African Bantu, linguistic areas

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1 Introduction

With about 450-500 languages, the Bantu family is characterised by a high degree of cross-linguistic microvariation which poses a significant challenge for the study of the typology, language comparison and historical relationships of the family. While there is a long-established history of comparative work examining Bantu languages, recent years have seen the advancement of large-scale digital databases on which to base comparative generalisations. This paper draws on work contained in the Bantu Morphosyntactic Variation (BMV) database (Marten et al. 2018) which is based on 142 morphosyntactic parameters of variation (Guérois et al. 2017). These descriptive parameters cover a range of morphological and syntactic domains and enable comparison of languages, individual parameters and/or sets of parameters. They also provide a means of identifying different relations of similarity and difference between languages.

This paper explores an areal approach to language comparison, based on morphosyntactic criteria, and examines which features of variation are particularly prevalent in East Africa, with a view to identifying characteristic features of East African Bantu morphosyntax. We use a sample of 44 languages, 22 from East Africa and 22 from outside of East Africa, and identify 10 features in which the two groups differ most clearly. These features are related to the number of noun classes, aspects of word-order, negation, double-object constructions, inversion constructions and complex sentences. We show that the Bantu languages of East Africa exhibit a high level of structural similarity, especially when compared to those of the Southern and North-West Bantu regions. There is also however, as can be expected, considerable variation found within East African Bantu languages. Results of our study contribute to our understanding of morphosyntactic variation in Bantu, and how this can be conceptualised geographically. We show how East Africa can be understood as a linguistic area, and which features contribute to this characterisation. The study also poses questions

about to what extent the areal results presented here relate to historical processes of language change, language contact and typological generalisations of the language family.

The paper is structured as follows: Section 2 provides a background to the parameters of morphosyntactic variation and the database. Section 3 examines the parameters which distinguish East African Bantu from other regions. Section 4 constitutes a discussion of the results. Section 5 offers brief concluding remarks.

2 Methodology: a parametric examination of morphosyntactic variation in Bantu

There is a long history of comparative work of Bantu languages (e.g. Meinhof 1906, 1948; Meeussen 1967; Guthrie 1967-71). The Bantu languages show a wide range of similarities across a number of domains of morphosyntax, but also an extensive degree of variation. Over the last decade, a growing body of work has examined Bantu morphosyntax more closely. An important component of this work looks at microvariation – i.e. smaller fine-grained differences between closely related languages or varieties (e.g. Petzell & Hammerström 2013; Bloom Ström 2018; Mtenje-Mkochi 2020).

A particular approach to the systematic study of morphosyntactic variation in Bantu adopts sets of morphosyntactic parameters, or features, to examine key areas of morphosyntax in a wide range of languages. Many studies adopting this approach employ binary parameters which are compared in order to ascertain the morphosyntactic ‘distance’ between languages and to further our understanding of these constructions (e.g. Marten et al. 2007; Zeller and Ngoboka 2015; van der Wal 2017; Shinagawa and Abe 2019).

Against this background, Guérois et al. (2017) develop a large set of 142 surface-level parameters of morphosyntactic variation in Bantu. These parameters cover 12 main domains of Bantu morphosyntax as outlined in Table 1 below.

Thematic groups	Number of parameters
1 Nouns and pronouns	14
2 Noun modifiers	11
3 Nominal derivation	4
4 Lexicon	6
5 Verbal derivation	13
6 Verbal inflection	38
7 Relative clauses, clefts and questions	15
8 Verbless clauses	3
9 Simple clauses	6
10 Constituent order	14
11 Complex sentences	15
12 Expression of focus	3

Table 1: Thematic groups of BMV parameters (Guérois et al. 2017, Marten et al. 2018)

Marten et al. (2018) develop the Bantu Morphosyntactic Variation (BMV) database for these parameters. The database currently contains data for some 120 languages, although many of these languages have only a few data points. For the purposes of this study, we excluded six of the parameters which relate to the lexicon (Thematic Group 4 in Table 1), so the comparison conducted here involves 136 parameters. We compared a total of 44 languages, which are all languages which have more than 50% datapoints each, that is languages for which data were available for at least 50% of the parameters. The cut-off point of 50% is to some extent arbitrary, but produced as broad a set of languages as possible from those available in the database, at the same time as ensuring reasonable reliability of the empirical

results. This sample of languages was then divided into two groups with 22 languages in each group: An East African group and a non-East African group, as shown in Table 2 and on Map 1. The East African group is defined in geographical terms, and is comprised of the available languages from Kenya, Uganda, Rwanda, Burundi, Uganda, Tanzania and Mozambique, and one language (Kifuliiru) from the eastern border of the DRC. The non-East African group consists of the other 22 available languages. The East African group includes languages of Guthrie's (1967-1971) zones E, F, G, JD, JE, and P, as well as one language from zone N (Sena N44). All these languages belong to the Eastern group as established by Grollemund et al.'s (2015) genetic classification. In contrast, the non-East African group includes languages from zone A, B, C, H, K, L, M, R and S as well as one zone N language (Chewa). The two groups therefore cover all five of Grollemund et al.'s (2015) five groups which are found outside East Africa, i.e. North-Western, Central-Western, West-Western, South-Western and Eastern. The non-East African set also includes the Grassfields Bantu language Babanki.

East African Bantu Languages
Nyole (E35), Gikuyu (E51), Uru (E622d), Rombo (E623), Digo (E73), Bende (F12), Rangi (F33), Chasu (G22), Mbugu (G221), Swahili (G42), Makunduchi (G43c), Chindamba (G52), Kinyarwanda (JD61), Kifuliiru (JD63), Ha (JD66) Nyoro (JE11), Ganda (JE15) Matengo (N13), Sena (N44), Yao (P21), Makhuwa (P31), Cuwabo (P34)
Non-East African Bantu Languages
Grassfields Babanki, Bafia (A50), Tuki (A601), Eton (A71), Nzadi (B865), Mongo (C61), Kisikongo (H16a-1), Kimbundu (H21), Cokwe (K11), Ngangela (K12b), Thimbukusu (K333), Kaonde (L41), Nyiha (M23), Bemba (M42), Lamba (M54), Chewa (N31), Umbundu (R11), Herero (R31), Yeyi (R41), Tswana (S31), Zulu (S42), Ronga (S54)

Table 2: Languages of the study



Map 1: Geographical distribution of the languages of the study

The BMV database was used to identify which parameters most clearly differentiate the East African languages in our sample from the non-East African languages. Results of this enquiry are shown in Table 3 below. There are 10 parameters which had similarity values of 50% or below when compared to the non-East Africa language group. The percentage similarity is a measure of the level of similarity of the combination of all of the values for the parameter between the two groups. For example, if a parameter has two possible values (a) and (b) and the EA languages all have value (a) and the non-EA languages all have value (b) then similarity would be 0%. Conversely if all languages have value (a), then similarity would be 100%. In practice the combination of matching values gives a similarity value somewhere between these two extremes. In this study we focused on those parameters with the lowest similarity values, which as a result best differentiate the two groups. We selected the 10 parameters with the lowest similarity values as being the parameters which best differentiate the two groups. The choice of 10 parameters was determined by a somewhat arbitrary cut off point of parameters for which there was a 50% similarity (i.e. P116 and P139). The next degree of similarity for example was 52%.

Parameter	Similarity EA and non-EA Bantu
P117: Object order asymmetry: In pragmatically neutral ditransitive constructions, can either object be adjacent to the verb?	33%
P053: Place of negation in dependent tenses: Where is negation expressed in dependent tenses?	39%
P122: Locative inversion: Is locative inversion attested?	43%
P121: Verb-subject order: Are there verb-initial clauses with subject inversion?	44%
P004: Number of noun classes: How many noun classes are there?	45%
P038: Agent noun phrase: How is the agent noun phrase introduced?	46%
P127: Complementiser presence: Is a subordinator/complementiser present in a subordinate clause?	47%
P078: Object doubling: Can the object marker and the post-verbal lexical object noun phrase co-occur in the same domain?	47%
P116: Control of object order: In ditransitive constructions, are there mechanisms which control the order of multiple objects?	50%
P139: Verb inflection in raising constructions: In raising constructions, can the raising verb and the main verb both be inflected?	50%

Table 3: Percentage similarity of parameters for East African language set

3 Parameters of variation: findings and results

The ten parameters listed in Table 3 emerge as causing East African Bantu languages to stand out amongst our sample as they show the lowest degree of similarity between the two groups. In order to better understand the features which are most distinctive of East African Bantu languages in our sample, we examine the parameters in turn. While in Table 3 the parameters are ranked according to percentage similarity, in this section they are ordered thematically in line with the BMV database (see Table 1).

3.1 P004: How many noun classes are there (including locative classes)?

The number of noun classes among the languages of our East African group ranges from 12 to 21.¹ The language with the lowest number of noun classes is Swahili with 12 noun classes (Ashton 1947: 10). The languages with the highest number are Ganda and Nyole (both spoken in Uganda), with 21 noun classes. Makuwa has 13 noun classes, and four languages have 15 noun classes (Rangi, Makunduchi, Chindamba and Bende). The Bende noun class system is shown in (1).

- 1) Bende (Abe 2019: 192)
 - mú-/bhá- (1/2)
 - mú-/mí- (3/4)
 - í~li-/ma- (5/6)
 - sí-/fí- (7/8)
 - n-/n- (9/10)
 - lú- (11)
 - ka-/tu- (12/13)

¹ Many Bantu languages have prefixless nouns the agreement patterns of which follow classes 1, 2 or 5. These prefixless nouns are conventionally labelled as subclasses 1a, 2a and 5a. Because they are merged with their respective “upper” classes in terms of agreement, they are not counted separately in the present study. In other words, we are taking agreement pattern, rather than noun class prefixes, as constitutive of noun class (cf. Corbett 1991, Marten 2021)

bhu-	(14)
kú-	(15)

Four languages (Chasu, Ha, Cuwabo and Sena) have 16 noun classes, and four languages have 17 noun classes: Uru, Gikuyu, Rombo, and Mbugu. Three languages, Digo, Nyoro, and Yao, have 18 noun classes, and two languages have 19 classes, Kinyarwanda and Matengo. Kifuliiru has 20 classes, while Nyole has 21. The Nyole noun class system is presented in (2).

2) Nyole (Wicks 2006: 29)

omu-/ aba-	(1/2)
Ø	(1a)
omu-/emi-	(3/4)
e-/ama-	(5/6)
ehi-/ebi-	(7/8)
e(N)-/e(N)-	(9/10)
olu-	(11)
aha-	(12)
otu-/obu-	(13/14)
ohu-	(15)
aḡa-	(16)
ohu-	(17)
omu-	(18)
ogu-	(20)
aga-	(22)
e-	(23)

The difference with respect to the number of noun classes between the East African Bantu languages of our sample and the non-East African languages is summarised in Table 4.

	EA languages (data available for 22 out of 22 languages)	Non-EA languages (data available for 22 out of 22 languages)
9 classes	0%	5% (1)
10 classes	0%	5% (1)
11 classes	0%	0%
12 classes	5% (1)	14% (3)
13 classes	9% (2)	5% (1)
14 classes	0%	5% (1)
15 classes	18% (4)	0%
16 classes	14% (3)	5% (1)
17 classes	18% (4)	14% (3)
18 classes	14% (3)	45% (10)
19 classes	9% (2)	5% (1)
20 classes	9% (2)	0%
21 classes	5% (1)	0%

Table 4: P004 How many noun classes are there?

Table 4 shows that while the East African Bantu languages comprise systems with 12 to 21 classes, the non-East African Bantu languages exhibit systems with 9 to 19 classes. There are thus more class distinctions in the East-African Bantu languages than in non-East African

Bantu languages: The average number of classes in East African group is 16.7, but in the non-East African group it is 15.8. This difference is confirmed by looking at the higher and lower ends of the scale. Only one language of the East African groups has 12 or fewer classes, while in the non-East African group five languages fall into this group. Conversely, five languages of the East African group have 19 or more classes, but this is true of only one language in the non-East African group. Another difference is that there is more evenly spread variation in the East African group, where the four most prevalent systems – involving 15, 16, 17 and 18 classes – are fairly evenly distributed, with each found in between 14% and 18% of the languages of the East African group. In contrast, in the non-East African group, there is one most widely found system, namely the one with 18 classes, which is found in almost half (45%) of the languages of the group. These two factors – the higher number of classes in different distributions at the lower and upper ends of the scale, and the more evenly spread distribution of different systems in the middle of the scale in the East African group – are the main source of the variation between the two language groups.

3.2 P038: How is the agent noun phrase (when present) introduced?

This parameter concerns the introduction of the agent noun in passive constructions. 11 (50%) of the 22 EA languages employ the comitative or instrumental for the introduction of the agent. In Bende, for example, the instrumental *nó* introduces the agent noun phrase (3) while in Kinyarwanda, the instrumental *na* (with the contracted form *n'*) is used (4).

3) Bende (Shinagawa and Abe 2019: 199)

Júma	gha-a-he-ébhwa	si-taábhu	nó	Yúko
Juma	SM1-PST-give-PASS-FV	7-book	by	Yuko

‘Juma was given the book by Yuko.’

4) Kinyarwanda (2017, Jerro field notes)

Mw-ishyamba	ha-teme-w-e	igiti	n'	umuhigi
18-forest	SM16-cut-PASS-FV	tree	by	hunter

‘In the forest was cut the tree by the hunter.’

The other 11 of the EA languages display notable variation and employ a variety of methods, including use of a copula (Rangi), no overt marker (Luganda) or use of a different preposition (Kimakunduchi).

5) Rangi (Gibson 2012: 79)

Inkwi	i-ji	ja-tem-irwe	ní	á-vá	va-temainkwi
10.firewood	10-DEM	SM10.PST-cut-PERF.PASS	COP	DEM-2	2-lumberjack

‘This firewood was cut by those lumberjacks.’

6) Ganda (Dom 2014: 106)

E-li-motoka	a-a-twal-ibw-a	Mukasa
AUG5-5-car	SM1-REM-take-PASS-FV	Mukasa

‘The car was taken by Mukasa.’

A different pattern is exhibited in Nyole and Matengo where an agent noun phrase cannot be included in a passive construction.

The difference between the East African languages and the non-East African languages with respect to this parameter is summarised in Table 5.

	EA languages (data available for 21 out of 22 languages)	Non-EA languages (data available for 17 out of 22 languages)
no: an agent noun phrase cannot be added to a passive construction	10% (2)	0%
1: by the comitative or instrumental (e.g. <i>na</i>)	52% (11)	18% (3)
2: by class 17 locative morphology (e.g. <i>ku</i> or <i>kwa</i>)	0%	29% (5)
3: by another preposition	5% (1)	18% (3)
4: by a copula	19% (4)	24% (4)
5: there is no overt marker used to introduce the agent noun phrase	10% (2)	0%
6: using two (or more) of the above strategies	5% (1)	12% (2)

Table 5: P038 How is the agent noun phrase introduced?

Table 5 shows that a key difference between these two groups concerns the diversity of strategies. The East African languages are more uniform with 52% of the languages using the comitative or instrumental. Outside East Africa only 5 out of 17 (29%) languages use a single strategy – class 17 locative morphology (*ku* or *kwa*). This points to another feature that sets these two language groups apart: while the use of comitative or instrumental is the dominant strategy among East African Bantu languages, this strategy is less common outside East Africa where it is displayed by only three languages (Bafia, Eton and Nyiha). Strikingly, the use of class 17 locative morphology, which is the main strategy among non-East African Bantu languages, is not attested in any language of our East African group.

3.3 P053: Where is negation expressed in dependent tenses?

There are a variety of different forms and expressions of negation in Bantu languages (cf. Kamba Muzenga 1981, Güldemann, 1996, 1999, Nurse 2008, Devos and van der Auwera 2013, Guérois et al. fcmg). For example, Guérois et al.'s (2017) parameters distinguish between different negation strategies, the position in which negation markers are found, and the number of different negation markers found in a given language. Furthermore, there is often a difference between negation in main clause declaratives and negation in non-declarative and dependent clauses.

While Guérois et al. (fcmg) employ seven parameters related to negation, for our present study, one parameter is particularly significant: the place of negation in dependent clauses, including subordinate clauses, but also non-declarative mood categories such as imperatives or subjunctives (cf. Devos and van der Auwera 2013). A widespread feature of negation marking in Bantu is a pre-initial negative marker in main clauses, but a post-initial negative marker in dependent clauses, as seen in Makhuwa and Luganda main clause negation (7a, 8a) and dependent clause negation (7b, 8b):

7) Makhuwa (van der Wal 2009: 104)

- a. anámwáné **kha**-y-áá-thip-álé mi-khóva
 2.child NEG-SM2-PST-dig-PERF.DJ 4-bead
 ‘The children had not dug up beads.’
- b. o-**hi**-n-thel-é n-thíyáná o-wóoth-a
 SM2SG-NEG-OM1-marry-SBJV 1-woman CONN1-INF.lie-FV
 ‘Don’t marry a lying woman.’

8) Luganda (Nakayiza and Yoneda 2019: 367)

a. **te**-tu-a-som-a eki-tabo.
 NEG-SM1PL-read-FV 7-book
 ‘We didn’t read a book.’

b. bwe-ba-**ta**-tu-fumb-ir-e mmere tu-jja ku-fumb-a.
 when-SM2-NEG-OM1PL-cook-APPL-FV food SM1PL-FUT INF-cook-FV
 ‘If they don’t cook for us, we will cook.’

This use of two negative markers in different contexts is widespread across Bantu languages, and two forms have been reconstructed to Proto-Bantu – *ka- and *ti- (Meeussen 1967: 108). The pattern is common in Eastern Bantu languages (Nurse 2008: 180/81), and the use of a post-initial negative marker in subordinate clauses as the only negative marker has a strong areal presence in Eastern Africa, as can be seen in Table 6.

	EA languages (data available for 22 out of 22 languages)	Non-EA languages (data available for 19 out of 22 languages)
1: Pre-initial position only	5% (1)	5% (1)
2: Post-initial position only	68% (15)	16% (3)
3: Final vowel position of the inflected verb	14% (3)	32% (6)
4: Post-final position of the inflected verb	0%	11% (2)
5: Two (or more) of the above (either 1 or 2 + 3)	5% (1)	0%
6: Pre-verbal independent particle only	9% (2)	37% (7)
7: Post-verbal independent particle only	5% (1)	0%
8: Two (or more) of the strategies above	9% (2)	32% (7)

Table 6: P053 Where is negation expressed in dependent tenses?

Both East African and non-East African Bantu languages use a variety of positions for negative markers in dependent tenses. The main difference is the strong tendency in the East African group to use the post-initial position for marking negation in dependent clauses (value 2 in Table 6). In our sample, 15 out of 22 East African Bantu languages (68%) employ this strategy, in contrast to 3 out of 19 (16%) of our non-East African group. The relevant languages are Nyole, Uru, Rombo, Digo, Bende, Chasu, Mbugu, Swahili, Makunduchi, Kinyarwanda, Kifuliiru, Ha, Nyoro, Matengo, and Makhuwa in the East African group, and Bemba, Chewa, and Ronga in the non-East African group.

In contrast, in our group of non-East African Bantu languages, negation is often expressed by a combination of strategies. In Ngangela, the negative particle *kací* is used in the subjunctive (9a) while infinitives employ the post-initial negative marker *ci-* (9b).

9) Ngangela (Maniacky 2003: 149, 86)

a. **kací** u-tuv-e
 NEG SM2SG-pierce-SBJV
 ‘Do not pierce!’

b. ci-yaambi **ko**-a-eθí na-vu-tá ku-**ci**-aθ-á ku-tih-a íiŋ-gwe
 7-hunter NEG-SM1-be.NEG with-14-weapon 15-NEG-can-FV 15-kill-FV 9-leopard
 ‘The hunter who has no rifle cannot kill the leopard.’

As noted above, the use of a post-initial negative marker in dependent clauses has been reconstructed for Proto-Bantu, and can thus be seen as a comparatively old strategy. The use

of negative particles, such as *kací* in (9a), is more likely an innovation. The widespread use of the post-initial strategy in East Africa can thus be seen as a conservative feature, and the area overall as less innovative with respect to the development of negation strategies.

3.4 P078: Can the object marker and the post-verbal lexical object noun phrase co-occur in the same domain?

Object properties and object marking in Bantu languages have been the subject of a rich body of literature (see, e.g., Beaudoin-Lietz et al. 2004; Hyman and Duranti 1982; Marlo 2015; Marten and Kula 2012; Morimoto 2002; Riedel 2009; van der Wal 2017; Zeller 2014 for typological overviews). Since Bresnan and Mchombo (1987), the syntactic status of object markers (OMs) has become a matter of debate in Bantu morphosyntax. OMs are typically divided into two categories: either pronominal clitics or agreement markers. In the first case, OMs behave as true grammatical objects of the verb, and cannot co-occur with the lexical object NP in its base position. Kinyarwanda is an example of language with such ‘non-doubling’ OMs (value ‘no’ for P078). In (10a), the presence of the lexical object NP *ibarwa* ‘letter’ in its base position excludes object-marking on the verb. Their co-occurrence is possible only if the lexical object NP is dislocated, either on the left clause-periphery as a topic (10b), or at the right clause-periphery as an afterthought (10c), although the latter is less readily accepted than the former.

10) Kinyarwanda (Zeller and Ngoboka 2015: 208-209)

- a. A-ba-gabo ba(-ra)(-*ka)-kuund-a **a-ka-zi.**
 AUG-2-man SM2-DJ-OM12-like-FV AUG-12-work
 ‘Men like work.’
- b. **A-ka-zi** a-ba-gabo ba-ra-ka-kuund-a.
 AUG-12-work AUG-2-man SM2-DJ-OM12-like-FV
 ‘Work, men like it.’
- c. ??A-ba-gabo ba-ra-ka-kuund-a, **a-ka-zi.**
 AUG-2-man SM2-DJ-OM12-like-FV AUG-12-work
 ‘Men like it, work.’

In contrast, when OMs function as syntactic agreement markers, they co-occur with the lexical object NP in its base position. No complementarity between OMs and object NPs is obtained as in non-doubling languages. Instead, OMs are ‘doubled’. This is illustrated in (11) with Swahili, where human object NPs are obligatorily co-indexed on the verb (value 2).

11) Swahili

- mama a-na-m-val-ish-a **m-toto**
 1a.mother SM1-PRS-OM1-dress-CAUS-FV 1-child
 ‘The mother is dressing the child.’

Languages vary as to which constructions require obligatory doubling. The degree of obligatoriness may for instance depend on the lexical and/or grammatical properties of the verb, on class membership, semantic properties, or pragmatic properties of the in situ lexical object.²

² See Devos and Guérois (2022) for a detailed analysis of this kind of variation in Yao, Sena, Makhuwa and Cuwabo.

Other languages show optional doubling, i.e. the presence of the OM is not conditioned by properties of the verb or the lexical object. Luganda is a case in point, where the presence versus absence of the class 1 OM *mu-* does not alter the meaning of the sentence as shown in (12).

- 12) Ganda (Nakayiza and Yoneda 2017: 374)
- | | | |
|------------------------|----------|-----------|
| na-(mu-)labye | mu-kwano | gwange |
| SM1.PST-(OM1-)meet.PFV | 1-friend | 1.POSS1SG |
| ‘I met my friend.’ | | |

Table 7 shows how East African and non-East African Bantu languages differ with respect to object doubling.

	EA languages (data available for 22 out of 22 languages)	Non-EA languages (data available for 21 out of 22 languages)
n.a. (there is no slot for object marking in the language)	0%	14% (3)
no	9% (2)	48% (10)
1: yes, co-occurrence is possible/optional	50% (11)	38% (8)
2: yes, co-occurrence is required in certain contexts	41% (9)	0%

Table 7: P078 Can the object marker and the post-verbal lexical object noun phrase co-occur in the same domain?

From Table 7, we see that the majority of the East African group resort to the doubling pattern, either optionally (value 1) for 50%, or obligatorily (value 2) for 41%. Only two languages, Kifuliiru and Kinyarwanda (both from zone JD), are non-doubling (value ‘no’). The non-doubling pattern is, in turn, more commonly attested in non-East African languages (48%), and when OMs are doubling, it is always optional (38%). Also note that many North-Western Bantu languages have no slot for object marking (in our sample this is the case for Bafia, Eton and Nzadi).

Our sample, in spite of its small size, confirms van der Wal’s (2016) observation that doubling languages are more broadly attested in Eastern Bantu.

3.5 P116: Control of object order: In ditransitive constructions, are there mechanisms which control the order of multiple objects?

This parameter investigates the factors conditioning the order of objects in ditransitive constructions. This may include information structure, semantic properties of the objects, and notions related to the animacy/definiteness scale. In terms of information structure, the focused object may be restricted to a specific position in the clause (see Downing and Hyman 2016 for an overview). It is common, for example, for the position Immediately-After-the-Verb to be reserved for focus, especially when a conjoint/disjoint alternation exists in the language (see van der Wal and Hyman 2017). In Cuwabo ditransitives, while the focused object immediately follows the conjoint verb, the topic object is left-dislocated. This is illustrated in (13), which is a response to the question ‘What did the visitors buy for their families?’

13) Cuwabo (Guérois 2015: 556)

á-léddo á-múdhí=áwa a-a-gul-el-é **mwánabwa**
 2-visitor 2-relative=POSS3PL SM2-OM2-buy-APPL-PFV.CJ 1a.dog.H1D
 ‘The visitors bought a dog for their families.’

Since Bresnan and Moshi (1990), ditransitives are typically analysed as being either ‘symmetrical’ or ‘asymmetrical’. The distinction relates to whether objects behave identically or not in a number of syntactic tests, including word order. In some languages, object symmetry may vary depending on the thematic role of the objects involved. Chaga benefactive applicatives are asymmetrical (14a), as the benefactive argument always appears first. In contrast, object order is free (i.e. symmetrical) in instrumental applicatives (14b).

14) Vunjo-Chaga (Moshi 1998: 148)

a. Lémúnyí n-á-lé-úlr-í-á máná sházru * ~ sházru máná
 Lemunyi FOC-SM1-PST-buy-APPL-FV 1.child shoes
 ‘Lemunyi bought (for) the child shoes.’

b. M-solro n-á-lé-wé-í-á kí-shú nyáma ~ nyáma kishú
 1-man FOC-SM1-PST-slice-APPL-FV 7-knife 9.meat
 ‘The man sliced with a knife the meat.’

Animacy and/or definiteness may also play a role in object order. In Sesotho, an overall symmetrical language, the object that ranks higher in animacy immediately follows the verb (Demuth et al. 2005: 424-425).

15) Sesotho (Demuth et al. 2005: 425)

e-tlis-ets-a morena nku. * ~ nku morena
 SM1PL-bring-APPL-FV 1.chief 9.sheep
 ‘We’re bringing the sheep for the chief.’

The difference between the East African Bantu languages of our sample and the non-East African languages with respect to the order of objects in double object constructions is summarised in Table 8.

	EA languages (data available for 18 out of 22 languages)	Non-EA languages (data available for 12 out of 22 languages)
0: No, flexible object order	11% (2)	0%
1: Yes, order determined by IS	6% (1)	25% (3)
2: Yes, order determined by thematic/semantic properties of the objects	44% (8)	67% (8)
3: Yes, both 1 & 2 above	39% (7)	0%
4: Yes, other factors (e.g. predicate type) possibly in addition to 1 and/or 2	0%	8% (1)

Table 8: P116 Is there an object order control mechanism?

In most East African languages, the order of multiple objects in ditransitives depends on specific mechanisms. Only Gikuyu and Rombo are exceptions where object order appears to be completely flexible, which means that both objects have object properties. In contrast, the remaining languages vary as to which of the two objects can appear as the first postverbal object. Among the control mechanisms, the thematic/semantic properties of the object

(value 2) play a major role for 8 languages (44%), and a combination of thematic/semantic properties and information structure (value 3) determines the order for 7 languages (39%).

Comparing East African with non-East African Bantu languages, the data show that there is overall uniformity between the two groups, but that there are differences in detail. Like in East African languages, in non-East African languages the thematic/semantic properties of the object (value 2) are a key factor in determining object word order, found in 8 languages (67%). The main difference between the two groups lies in the possibility of combining the control mechanisms (value 3). About a third of East African languages (39%) allow such combination, whereas none of non-East African languages do. However, it should be noted that we only have data for 12 non-East African languages for this parameter.

3.6 P117: In pragmatically neutral ditransitive constructions, can either object be adjacent to the verb?

This second parameter on ditransitive constructions examines which of the two objects possesses the properties that characterise prototypical objects of transitive verbs. Chewa is often cited as an example of an asymmetrical language. In applicative ditransitives the benefactive necessarily follows the verb, while the opposite order theme-benefactive is ungrammatical, as shown in (16).

16) Chewa (Mchombo 2004: 80)

A-lenje a-ku-phík-íl-á a-nyaní zí-tumbûwa. *zitumbúwá anyani
 2-hunter SM2-PRS-COOK-APPL-FV 2-baboon 8-pancake
 ‘The hunters are cooking (for) the baboons some pancakes.’

This contrasts with languages where both orders are acceptable. This is the case in Ha, for instance, where in lexical ditransitives there is no restriction on the order of the (human) recipient object *umwáana* ‘child’ and the (inanimate) patient object *umukáaté* ‘bread’.

17) Ha (Harjula 2004: 169)

Umugorégore ya-mu-haaye umwáana umukáaté. ~ umukáaté umwáana
 1.woman SM1-OM1-give.PERF 1.child 3.bread
 ‘The woman gave the child bread / bread to the child.’

However, object (a)symmetry is rarely a straightforward mechanism. A symmetrical language is likely to also display some asymmetric patterns, e.g. depending on the type of ditransitive predicate (van der Wal 2017). Unfortunately, dedicated studies on such fine-grained variation remain scarce, and grammars often do not provide detailed information on this topic. While we present some data in Table 7, these data should be taken with some degree of caution. It should also be noted that we only have data for 12 languages of the non-East African group. And, as already seen in Section 3.5 above, most East African languages considered broadly symmetric are asymmetric in specific contexts.

	EA languages (data available for 18 out of 22 languages)	Non-EA languages (data available for 9 out of 22 languages)
No, asymmetric object order	33% (6)	100% (9)
Yes, symmetric object order	67% (12)	0%

Table 9: P117 In pragmatically neutral ditransitive constructions, can either object be adjacent to the verb?

As Table 9 shows, a notable difference in the distribution of (a)symmetric patterns seems to prevail between East African and non-East African Bantu languages. Whereas the 9 languages examined in the latter group, namely Bafia, Tuki, Eton, Nzadi, Mongo, Bemba, Tswana, Zulu, and Ronga, are asymmetric, this is the case for only six languages (33%) of the East African group. These are Digo, Bende, Kifuuliru, Matengo, Yao and Cuwabo. In contrast, the East African languages Nyole, Gikuyu, Uru, Rombo, Chasu, Swahili, Makunduchi, Chindamba, Kinyarwanda, Nyoro, Ganda, and Sena are considered symmetric. Apart from Sena (Mozambique), these symmetric East African languages are all spoken in the north-eastern part of the Bantu area, thus indicating a more restricted geographic pattern. In stark contrast to the East African group, none of the languages of the non-East African group have symmetric order.

3.7 P121: Are there verb-initial clauses with subject inversion?

Two kinds of inversion construction are relevant for the differentiation of East African and non-East African Bantu languages in our study. The first are verb-initial clauses with subject inversion, discussed in this section, and the second are locative inversion constructions, discussed in Section 3.8 below. Verb-initial clauses with subject inversion are also described asthetic statements or subject focus constructions. Example (18) from Matengo shows variation from the standard subject-verb order to one in which the verb appears clause-initially.

18) Matengo (Yoneda 2011: 756)

Gu-hábwiki ńko:ngo
SM3-fall.PERF 3.tree
'A tree has fallen'

There are four possible values for this parameter as shown in Table 10.

	EA languages (data available for 16 out of 22 languages)	Non-EA languages (data available for 12 out of 22 languages)
no:	0%	8% (1)
1: yes, and the verb agrees with the postverbal subject	81% (13)	25% (3)
2: yes, and the verb shows default agreement	6% (1)	42% (5)
3: yes, both 1 and 2 are possible	13% (2)	25% (3)

Table 10: P121 Are there verb-initial clauses with subject inversion?

Results from our sample show that 13 of the East African languages (81%) have constructions in which the verb agrees with the postverbal subject. Less common is the pattern where the verb shows default agreement (the only language in our East African group is Gikuyu), while Luganda and Swahili are the only languages which allow either subject agreement or default agreement. There are no languages in our East African group in which subject inversion constructions are not attested, showing that subject inversion is a widespread phenomenon in the region. In contrast, in the non-East African Bantu group, default agreement is the most common pattern (42%), while 25% of the languages show agreement with the postverbal subject (value 1) and 25% have both patterns (value 3).

3.8 P122: Is Locative Inversion attested?

Locative inversion (LI) is another construction type for which the distribution varies between the East African and non-East African groups. Bantu languages show a range of inversion constructions, where the logical subject is placed after the verb, and another constituent is in preverbal, grammatical subject position (Marten and van der Wal 2014). In LI, the grammatical subject refers to a location, and typically two different kinds of LI constructions are distinguished – formal LI (19) and semantic LI (20).

19) Chindamba (Edelsten and Lijongwa in the BMV database, Marten et al. 2018)

Pa-kaya pa-ghonj-a va-ndu va-tangala
 16-9.house SM16.PERF-sleep-FV 2-person 2-many
 ‘In the house there sleep many people’

20) Zulu (Buell 2007: 108)

Lezi zi-ndlu zi-hlala aba-ntu aba-dala.
 10.DEM 10-house SM10-live 2-person 2-old
 ‘Old people live in these houses.’

In formal LI, the locative argument is formally marked as a locative phrase – e.g. by the class 16 prefix *pa-* in *pakaya* ‘in the house’ in (19) – and the verb agrees with the locative class. In contrast, in semantic LI the locative argument retains its original noun class – e.g. class 10 in *zindlu* ‘houses’ in (20) the class with which the verb also shows agreement.

This parameter therefore distinguishes four values for whether LI is attested:

	EA languages (data available for 19 out of 22 languages)	Non-EA languages (data available for 17 out of 22 languages)
0: There is no locative inversion (although there might be default/expletive constructions)	37% (7)	12% (2)
1: Yes, formally (i.e. the verb shows agreement with a preceding noun phrase which is locative marked)	32% (6)	71% (12)
2: Yes, semantically (i.e. the verb shows agreement with a preceding locational noun phrase of a non-locative class)	0%	18% (3)
3: Yes, both formally and semantically	32% (6)	0%

Table 11: P122 Is Locative Inversion attested?

While LI is found across the Bantu area (even though more consistently in the Southern and Central areas), there are notable differences in the distribution of LI between East African and non-East African Bantu languages.

As Table 12 shows, there are two main differences between the East African and the non-East African group. First, in terms of overall distribution, among the East African group three groups of languages of about equal size can be identified – 37% with value ‘0’, with no LI (Gikuyu, Uru, Rombo, Chasu, Kinyarwanda, Matengo, and Makhuwa), 32% with value ‘1’, with only formal LI (Bende, Mbugu, Swahili, Chindamba, Kifuliiru, and Sena), and 32% with value ‘3’, with both formal and semantic LI (Digo, Rangi, Makunduchi, Ganda, Yao, and Cuwabo). In contrast, the majority of non-East African languages (71%) has formal LI. Second, in the East African languages, semantic LI is only found in languages which also have formal LI. In contrast, in the non-East African Bantu languages from our sample, formal and semantic LI are not attested in the same language.

It is difficult to provide a more detailed interpretation of the distributional facts. The relative flexibility of subject and object order in Bantu has been noted by Meeuseen (1967: 120), who proposes that Proto-Bantu had formal LI. If we assume the presence of formal LI as a starting point, then East African Bantu would appear to be more dynamic, having had more processes of innovation and loss than non-East African Bantu languages. It would be worthwhile exploring whether these developments are related to other morphosyntactic changes, either in the morphosyntax of locatives, or of transitivity and alignment, and the wider language contact and change dynamics in Eastern Africa.

3.9 P127: Is a subordinator/complementiser present in a subordinate clause?

Complementation systems among Bantu languages exhibit a significant degree of variation (Myers 1975). However, among the languages of our East African group, the system is relatively uniform. The majority of the languages in the group use a complementiser to introduce a subordinate clause, either optionally (15 languages, 83%) or obligatorily (1 language, namely Sena, 6%). In Swahili, for example, the complementiser *kwamba* is optional (21).

21) Swahili

- a. A-li-sem-a kwamba wa-geni wa-ta-fik-a asubuhi
 SM1-PST-say-FV that 2-visitor SM2-FUT-arrive-FV morning
 ‘He/she said that the visitors would arrive in the morning.’
- b. A-li-sem-a wa-geni wa-ta-fik-a asubuhi
 SM1-PST-say-FV 2-visitor SM2-FUT-arrive-FV morning
 ‘He/she said the visitors would arrive in the morning.’

The optional occurrence of the subordinator in most of the East African Bantu languages contrasts with the situation in non-East African Bantu languages where obligatory use of the subordinator is more widespread (59% or 10 languages).

	EA languages (data available for 18 out of 22 languages)	Non-EA languages (data available for 17 out of 22 languages)
no	11% (2)	0%
1: yes, optionally	83% (15)	41% (7)
2: yes, necessarily	6% (1)	59% (10)

Table 12: P127 Is a complementiser present in a subordinate clause?

Table 12 shows that ten (59%) non-East African Bantu languages obligatorily use the subordinator and only seven (41%) non-East African Bantu languages make optional use of the subordinator, specifically Nzadi, Mongo, Kisikongo, Lamba, Yeyi, Zulu and Ronga. This suggests a significant difference between East African and non-East African Bantu languages in the obligatoriness of the subordinator. It seems that obligatory use of the subordinator is more established in the non-East African Bantu languages compared to the East African Bantu languages.

3.10 P139: In raising constructions, can the raising verb (i.e. in the upper clause) and the main verb (in the lower clause) both be inflected?

This parameter relates to raising constructions. In a raising construction, the argument which would have been the object is ‘raised’ to the subject position. Examples from Chindamba are shown below.

22) Chindamba (Edelsten and Lijongwa in the BMV database, Marten et al. 2018)

a. yi-ku-von-ek-a kuva John a-ku-m-day-a Jane
SM9-PRS-see-STAT-FV that John SM1-PRS-OM1-like-FV Jane
‘It seems that John likes Jane’

b. John a-ku-von-ek-a kuva a-ku-m-day-a Jane
John SM1-PRS-see-STAT-FV that SM1-PRS-OM1-like-FV Jane
‘John seems to like Jane’

The parameter asks where subject agreement is found in the upper clause as well as the lower clause. Overall, this is an under-researched area within the study of the morphosyntax of Bantu languages and data are available for only 11 East African and 2 non-East African languages in our database. Moreover, to be able to ascertain whether there is agreement in both the upper and lower clauses, sentences with two clauses are needed, further restricting access to the relevant data. As such, the topic is in need for closer examination and the results (in terms of distribution and percentage coverage) reported here should be treated as preliminary.

	EA languages (data available for 11 out of 22 languages)	Non-EA languages (data available for 2 out of 22 languages)
Raising constructions are not attested in the language	0%	50% (1)
Only one verb inflected	18% (2)	0%
Both verbs inflected	82% (9)	50% (1)

Table 13: P139 In raising constructions, can the raising verb and the main verb both be inflected?

Of the East African languages in our sample, 9 languages exhibit inflection in both the raising verb and the main verb (82%), while 2 languages (18%) do not (namely Gikuyu and Digo). While this is a relatively small dataset for this parameter, we can see that of these 11 languages the overwhelming majority exhibit inflection in both clauses. Of the two examples from non-East African languages, one does not allow raising construction, and the other involves inflection on both verbs. However, the available data do not seem to be enough to draw and significant conclusions.

4 Summary

This paper uses 10 descriptive parameters to identify particular aspects of the morphosyntax of East African Bantu languages which are responsible for distinguishing those languages of East African from the Bantu languages more widely. This paper employed the parameters developed by Guérois et al (2017) and examined the 10 parameters (of the larger set of 142) which exhibited 50% or less shared similarity between a group of East African Bantu languages and a group of non-East African Bantu languages. There were 22 languages in total in each of the two groups and the choice of languages for inclusion in the groups was

outlined in the introduction. On the basis of this we can identify the following salient differences for each of the parameters discussed, thereby establishing a mini-typology of salient and distinctive morphosyntactic features of East African Bantu languages.

P117 (33% similarity between East African and non-East African languages in our sample): In pragmatically neutral ditransitive constructions, East African Bantu languages appear to have a greater flexibility in object order than non-East African languages. Symmetric patterns are attested in two thirds of our East African group, whereas they do not seem to be accepted at all in our non-East African group, which are all asymmetric. Furthermore, almost all symmetric East African languages are geographically concentrated in the north-eastern corner of the Bantu area (Uganda, Kenya and North Tanzania).

P053 (39% similarity): East Africa is characterised by a very strong preference for marking negation in dependent clauses by a post-verbal negative marker. While this strategy is found across the Bantu area, in the non-East African Bantu languages of the sample it is more often combined with other strategies. We have proposed that this makes East Africa a comparatively conservative area when it comes to negation with dependent tenses.

P122 (43% similarity): East African Bantu languages show about an equal split between having no Locative inversion (LI), formal LI the presence of and both formal and semantic LI. So far, no East African Bantu language of the sample has been shown to have only semantic LI. In contrast, among non-East African Bantu languages, formal LI is the most common construction, and semantic LI is never found in the same language as formal LI.

P121 (44% similarity): Subject inversion constructions are a widespread phenomenon in the East African region and are found in all 16 languages of our East African group, and in more than 80% (13 out of 16 languages) of the languages, the verb agrees with the post-verbal subject.

P004 (45% similarity): The number of noun class distinctions is higher in the East African group than in the non-East African group. The average number of classes is 16.7 classes in the former, but 15.8 classes in the latter. Compared to non-East African Bantu languages, more East African Bantu languages are found at the upper end of the scale, and fewer languages at the lower end of scale. Also, different noun class systems are more evenly found amongst East African Bantu languages, while almost half of our non-East African Bantu group have an 18 class system.

P038 (46% similarity): Among East African Bantu languages, 11 (52%) languages introduce the agent noun phrase by the comitative or instrumental. The remaining 10 languages display variations and use of a copula, no overt marker or use of a different preposition. In contrast, the use of class 17 locative morphology is the most common strategy in non-East African Bantu languages (29%), but is not found in any of the languages in our East African group.

P127 (47% similarity): In East African Bantu languages, the use of a complementiser is often optional (15 out of 18 languages), while in 10 out of 17 non-East African Bantu languages the use of a complementiser is obligatory. It seems that obligatory use of the subordinator is more established in non-East African Bantu languages than in East African Bantu languages.

P078 (47% similarity): The co-occurrence of the object marker and the post-verbal lexical object is a general pattern of East African Bantu languages, either optionally (50%) or obligatorily (41%). In contrast, non-East African Bantu languages are less homogeneous in this respect: the majority are non-doubling, either because such constructions are considered ungrammatical, or because no slot is available for object marking (north-western languages), and obligatory doubling is not attested in any of language of our non-East African Bantu group.

P116 (50% similarity): In both East African and non-East African Bantu languages, the order of objects in ditransitives is most commonly controlled by the thematic/semantic properties of each object. However, information structure, as another object order mechanism, plays a bigger role in East African than non-East African languages, and can further be combined with the mechanism of object thematic/semantic properties.

P139 (50% similarity): Of the 11 languages of our East African group, the overwhelming majority exhibit inflection in both clauses in raising constructions (9 languages, 82%), while 2 (18%) languages do not (Gikuyu and Digo). We only have data for two non-East African Bantu languages, one of which does not have raising constructions, while the other shows inflection in both clauses.

5 Conclusions

The differences between the East African and the non-East African Bantu languages of the sample relate to a wide range of grammatical phenomena, including noun classes, nominal and verbal morphology, word order, inversion constructions, and the formation of complex sentences. The differences between the two groups thus do not follow from a specific area of grammar – for example, negation or verbal extensions – and can be seen as the result of wider processes of language contact and change, leading to more linguistic similarity within the group, and a higher degree of difference to other Bantu languages. Of course, this is just one set of data, and other features are likely to highlight different and overlapping areas of affinity.

Our results also show that the Bantu languages of East Africa exhibit a high level of structural similarity, especially when compared to those of the Southern and North-West Bantu regions. Particular salient features of East African Bantu languages include symmetric patterns in ditransitive constructions, negation marking in dependent clauses by a post-verbal negative marker, wide-spread subject inversion constructions, and the co-occurrence of formal and semantic locative inversion. It is features like this which cause the languages to stand out from a comparative perspective. However, within this, the languages also exhibit a high degree of fine-grained microvariation.

Overall, the paper contributes to our understanding of morphosyntactic variation in Bantu, as well as linguistic variation in East Africa more broadly and explores the use of large-scale databases for discovering areal, geographic patterns of language variation. In this instance we have shown that East African Bantu languages can be seen to constitute a distinct linguistic area with respect to the 10 grammatical features investigated here. Further research will show whether the area can be substantiated by further shared features, and whether the features can be related to specific historical or contact processes which have shaped East African Bantu languages.

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